

Claims

1. A powder container and dispensing device comprising a powder dispensing nozzle of the type having one or more small holes through which powder can be ejected and which is located in the wall of a container which in use is partially filled with the powder, wherein the powder is dispensed therefrom by squeezing the container to pressurize its contents, characterised by an intermediate powder reservoir in or on which some of the powder within the container becomes lodged in use, such that on squeezing the container, powder lodging in or on the intermediate reservoir is entrained in the airflow through the hole or holes in the nozzle to be discharged therewith, so that in general during each discharge action only powder in or on the intermediate reservoir will exit via the nozzle.
2. A device as claimed in claim 1 wherein the action of squeezing the container in use also causes other of the powder in the container to replace powder that has left the intermediate reservoir, so that the latter is replenished by each squeeze ready to be discharged with the next squeeze, or the replenishment is achieved by gently squeezing, tilting, inverting or tilting and gently squeezing the container prior to squeezing the container to discharge powder through the nozzle.
3. A device as claimed in claim 1 or 2, wherein the container includes a neck and the nozzle is provided at the outer end of the neck.
4. A device as claimed in claim 3, wherein the intermediate reservoir comprises an apertured plate or a filter fitted in the neck of the container just below but spaced from the nozzle.
5. A device as claimed in claim 3 wherein the intermediate reservoir comprises two apertured plates or filters fitted within the neck, a first having smaller openings than

the second in which the first is sandwiched between the nozzle and the second and each serves to hold a charge of powder, and when the container is squeezed the charge of powder in the first plate or filter is discharged through the nozzle openings, the charge of powder in the second plate or filter is transferred to the first filter, and the second plate or filter is recharged with powder from within the container.

6. A device as claimed in claim 1, 2 or 3, wherein the intermediate reservoir comprises a hollow tube extending into the container, the lower end of which is closed but which has a plurality of small holes in at least the wall or the lower end, or both the wall and the lower end, thereof.
7. A device as claimed in claim 4, 5 or 6, wherein the filter or plate, or the wall or the closed end of the intermediate reservoir tube, is formed from a woven fabric such as woven wire or a woven plastics mesh.
8. A device as claimed in claim 6 or 7, wherein the wall of the tube is corrugated to increase the surface area containing the small holes.
9. A device as claimed in claim 6 or 8, wherein filaments or spikes or hairs protrude from the exterior of the hollow tube, adjacent the small holes therein to increase the surface area in the vicinity of the holes, to which powder can adhere.
10. A device as claimed in claim 3, wherein the intermediate reservoir comprises a wad of mesh which is secured in the neck of the container below the nozzle.
11. A device as claimed in claim 3, wherein the intermediate reservoir comprises a cup which is fitted within the neck with the closed end of the cup spaced from the nozzle, and the closed end of the cup includes a plurality of small holes therein to allow powder to enter the interior of the cup and in which powder can become lodged.

12. A device as claimed in claim 11, wherein the nozzle is formed by a second cup which fits over and around the neck, the closed end of the second cup including one exit aperture through which powder is discharged when the container is squeezed.
13. A device as claimed in claim 12, wherein the second cup is slidable relative to the neck and an elongate protrusion extends from the closed end of the first cup towards the closed end of the second cup in alignment with the exit aperture in the closed end of the second cup, the movement of the second cup relative to the neck enabling the exit aperture to be positioned clear of the end of the protrusion to permit powder to exit, but also enabling the second cup to be moved so that the end of the protrusion enters and closes off the exit aperture to prevent powder from leaving.
14. A device as claimed in claim 13, wherein the neck is cylindrical and the second cup includes an inner concentric cylindrical wall which is a sliding fit within the neck, or within the first cup fitted within the neck.
15. A device as claimed in claim 13 or 14, wherein the second cup is a snap fit around a radial protrusion from the wall of the neck to prevent the cup from being pulled completely off the neck.
16. A device as claimed in any of claims 4 to 6 or 11 to 15, wherein the holes in the intermediate reservoir are arranged in a rectilinear array or matrix.
17. A device as claimed in any of claims 4 to 6, 9 or 11 to 16, wherein the cross section of each hole in the plate or plates, filter or filters, or wall or end of the cup or tube, tapers from the end adjacent the interior of the container to the end adjacent the nozzle.
18. A device as claimed in claim 3, wherein the intermediate reservoir comprises a foam pad, which is secured in the neck of the container below the nozzle.

19. A device as claimed in any of claims 1 to 3, wherein the intermediate reservoir comprises two foam pads, one having a coarser cell structure than the other, and the finer cell structure pad is sandwiched between the nozzle and the coarser cell structure pad.
20. A device as claimed in any of claims 1 to 3, wherein the intermediate reservoir comprises a plurality of closely spaced but not touching elongate protrusions in the form of pins or filaments or fingers similar to the bristles of a brush, which protrude inwardly towards the interior of the container away from the nozzle.
21. A device as claimed in claim 20, wherein the nozzle is formed at the end of a neck of the container and wherein the protrusions are of moulded plastics material and are embedded at one end in a plastics plug having holes therein through which powder can exit, and the plug either forms the apertured nozzle of the container or is fitted in the neck with the plug in contact with or just below the apertured nozzle.
22. A device as claimed in claim 20 or 21, wherein the protrusions are relatively rigid.
23. A device as claimed in claim 20 or 21, wherein the protrusions are flexible and possess a degree of resilience.
24. A device as claimed in any of claims 1 to 23 wherein the container wall is resiliently deformable by squeezing and will in general revert to its normal shape when the squeezing force is removed.
25. A method of discharging powder from a flexible walled powder container having an outlet nozzle containing at least one small opening therein at one end and an intermediate reservoir located internally of the nozzle in or on which powder can be retained for subsequent discharge through the nozzle, comprising the steps of gently squeezing, tilting, inverting or tilting and gently squeezing the container to charge the intermediate reservoir, and thereafter squeezing the flexible container wall to again

pressurise the contents of the container and force powder in the intermediate reservoir through the nozzle, and simultaneously to recharge the intermediate reservoir with a fresh charge of powder.

26. A method as claimed in claim 25 wherein prior to squeezing the container to dislodge powder, it is rotated into an upright or near upright condition so that powder not retained in or on the intermediate reservoir falls away from the discharge end of the container so as not to be available to be discharged.
27. A method as claimed in claim 25 or 26, wherein the nozzle opening is covered or blocks temporarily while the intermediate reservoir is charged or recharged with powder.
28. A method as claimed in claim 25, 26 or 27 wherein the powder is talcum powder.
29. Powder dispensers and methods of dispensing powder from containers substantially as herein described and as illustrated in the accompanying drawings.